

11.1 BACKGROUND

The purpose of Long-Term Stewardship (LTS) is to insure the productive and safe reuse of properties where residual contamination will remain in place. The success of Missouri risk-based corrective action (MRBCA) depends on effective LTS. It is difficult to overstate the importance of controlling future land use and site activities in relation to the success of risk-based corrective action. Virtually every aspect of this guidance – determining exposure pathways, applicable cleanup standards, risk management plans – depends on expectations for future land use and site activities. Institutional controls and engineered controls, where used, are a component of the cleanup decisions under MRBCA, and they must be effective for the program to be successful.

Various terms have been used to refer to land use controls, including “institutional controls (ICs), activity and use limitations (AULs), and long-term stewardship (LTS)”. Risk-based remedies often rely on these tools to ensure that people do not disturb residual contamination, engineered control measures or otherwise violate the assumptions used in developing site-specific Risk Management Plans (RMPs). This guidance uses the term “Activity and Use Limitations” because it was used throughout the Risk-Based Remediation Rule Workgroup process and is familiar to the participants in the guidance development process (see Appendix L for definitions). In performing risk-based corrective action, preventing unacceptable exposures or releases of hazardous substances may be achieved by removing the contamination entirely, or by managing exposure pathways from contamination to a “receptor” (such as a person or the natural environment). AULs clearly play a vital role in risk-based corrective action by facilitating cost-effective solutions to environmental problems and thereby supporting timely redevelopment of sites. AULs are a key element in ensuring redevelopment and reuse of formerly contaminated properties.

This section provides guidance for establishing the necessary AULs to provide sustainable protection for risk-based remedies. This guidance provides the minimum level of AULs necessary. Specific authorities (such as RCRA and CERCLA) may provide for controls that exceed these requirements. Any specific controls that are required by the authority supervising a cleanup must be met.

The department will approve a Risk Management Plan where the proposed controls and limitations are consistent with this guidance and any other controls or limitations that are required by the specific legal authority governing the cleanup.

11.2 LONG-TERM STEWARDSHIP PRINCIPLES

The following principles offer a broad approach and direction for LTS functions and activities in risk-based corrective action. LTS is the system of activities required to

protect human health and the environment from hazards remaining after cleanup is complete.

1. **Protectiveness.** Stewardship tools must ensure ongoing protection of human health, public welfare and the environment for sites with contamination remaining above unrestricted use levels after a Letter of Completion is issued for a site. The tools must facilitate monitoring, maintenance, and, if necessary, replacing engineered controls where they fail. Institutional controls cannot be the sole remedy if an acute exposure to any compound poses an unacceptable risk.
2. **Facilitates Safe Reuse of Sites.** The appropriate application of LTS can and should facilitate the beneficial reuse and redevelopment of property at sites that have existing infrastructure and an available work force.
3. **Reliable.** Each stewardship tool should be evaluated for uncertainties and include contingency plans for addressing possible failures.
4. **Transparent.** Information on sites should be readily available to the public.
5. **Durable.** The effectiveness of LTS tools must extend over the lifetime of the contamination risk. Given the potential duration of some remaining risks, current assumptions may require periodic re-evaluation on a specific schedule and modification as needed. Stewardship should be incorporated into existing systems that already have a proven track record of durability, function and acceptance among likely customers. Examples include one-call utility notification systems (for example, 1-800-DIG-RITE), county property recording systems, and the title insurance industry.
6. **Termination.** Stewardship controls can and should be altered when risk levels change and terminated when controls are no longer needed to protect human health, public welfare and the environment.
7. **Roles and Responsibilities.** Stewardship management and implementation responsibilities must be clearly articulated, accepted by all appropriate parties, and documented through legal and/or other means. Responsibilities regarding the determination and apportionment of stewardship activities among government and private entities (including the site owner) must also be defined and stated at the outset. The parties responsible for enforcing stewardship requirements must be clearly identified and capable of taking appropriate actions.
8. **Funding.** The life-cycle costs of LTS must be assessed and incorporated into the remedial decision-making process prior to final remedy action decisions. Accurate cost estimates are critical to identifying the financial resources needed to ensure the long-term protection of human health, public welfare, and the environment. Any financial assurance instrument used must ensure that adequate funding is available to support the activities in the Risk Management Plan. At sites where comparable costs are incurred for remediating a site to unrestricted use levels and remediating a site to a lesser level plus the lifetime costs of LTS, the preference will be toward the former, as reflected in the National Contingency Plan [40 CFR 300.430(a)(iii)].
9. **Application of New Science and Technology.** Responsible parties are encouraged, but not required, to include in risk management plans a mechanism for future examination and re-evaluation of new technologies for remediation or stewardship tools that may develop over time. The objective of this re-evaluation would be to determine whether the application of new science or technology would provide more

cost-effective means of assuring or enhancing protection of human health, public welfare or the environment in on-going or future remedial actions than the measures adopted in the risk management plan. The department will be willing to eliminate an AUL from the requirements of the risk management plan when the responsible party chooses to implement additional corrective action that allows unrestricted use of the site. Some sites have mandatory reviews and those should be incorporated into RMPs. For example, CERCLA sites require such a review every five years. Any specific reviews should be noted in the Risk Management Plan.

11.3 ACTIVITY AND USE LIMITATIONS

If needed, AULs must be fully developed and proposed as part of the Risk Management Plan. A thorough discussion of AULs can be found in EPA documents (USEPA, September 2000 and USEPA, December 2002). The Risk Management Plan can use AULs or a combination of AULs from among the types identified below. The following instruments may be AULs and may be described in the Letter of Completion:

1. Environmental Covenants,
2. Engineered Controls,
3. Well Location and Construction Restrictions, and
4. Department-accepted ordinances adopted and administered by a unit of local government.
5. Land use and/or institutional control mechanisms for federal facilities or property. Environmental Covenants, Letters of Completion, and the recording requirements of the authority under which remediation is being performed apply to the property and must be transferred with the property (that is, run with the land).

11.3.1 Environmental Covenants

An Environmental Covenant is an AUL that is used to impose land use limitations or requirements needed to protect current or future users from environmental contamination. Covenants are subject to department approval as part of the Risk Management Plan. Activities or uses that may be limited or required include prohibition of use of groundwater for potable purposes, restriction to nonresidential property uses, prohibition of certain uses of the site such as the construction of basements or trenches, or the operation or maintenance of engineered controls. For MRBCA purposes, environmental covenants must be enforceable by the state.

A model covenant is attached as Appendix J-1. An environmental covenant contains the following elements:

1. Name of the property owners and declaration of property ownership,
2. Identification of the property to which the environmental covenant applies by common address, and legal description,
3. A reference to the Department of Natural Resources contact information for the program and authority under which the remediation was conducted,
4. A statement of the cleanup standards that were achieved in the site's cleanup,

5. A statement of the reason for the application of land use limitations and requirements relative to protecting human health, public welfare and the environment from soil, groundwater, and/or other environmental contamination,
6. The language instituting such land use limitations or requirements, and granting access to the department or its designee to inspect the condition of the property, the integrity of controls, or other matters related to the contamination remaining onsite.
7. A statement that the conditions, limitations, restrictions or requirements apply to the current owners, occupants, and all heirs, successors, assigns, and lessees,
8. A statement that the limitations or requirements apply in perpetuity or until the department issues a new Letter of Completion approving modification or removal of the limitations or requirements, and a release or modification of the land use limitation is filed in the chain of title for the property that is the subject of the covenant,
9. Scaled site maps showing:
 - The legal boundary of the property to which the covenant applies,
 - The horizontal and vertical extent of COCs above applicable remediation objectives for soil and groundwater to which the covenant applies,
 - Global position system (GPS) data describing parts A and B,
 - Any physical features to which a covenant applies (e.g., engineered barriers, monitoring wells, caps),
 - The location of the source (if different from part A), and
 - The direction(s) of groundwater movement in subsurface zone(s) impacted by site-specific chemicals of concern,
10. A statement that any information regarding the remediation performed on the property for which the covenant is necessary may be viewed or obtained from the department. This information is maintained and available under the Missouri Sunshine Law (Chapter 610 RSMo.), and
11. The dated, notarized signatures of the property owners or authorized agent.

An approved environmental covenant must be recorded in the Office of the Recorder for the county in which the property that is the subject of the covenant is located. A copy of the recorded covenant that references the book and page of recording must be submitted to the department as part of the Risk Management Plan completion report, before the department will issue a Letter of Completion. The covenant does not become effective until it is officially recorded in the chain of title for the property.

A covenant remains in effect unless terminated in accordance with this guidance and applicable laws and regulations. The use of a site must be consistent with the terms of the environmental covenant imposed on the property unless the department approves a change in the terms of the covenant. In such case, documentation of the change shall be recorded in the chain of title and a copy of the materials recorded provided to the program under which the covenant was first imposed.

Deed restrictions may also serve as environmental covenants provided that they are enforceable by the state and run with the property. Private, or proprietary, deed restrictions and deed notices may be evaluated on a case by case basis to determine if

they provide a durable assurance, or other benefit, that limitations of uses for sites will be maintained and observed.

11.3.2 Ordinances and Supporting Memoranda of Agreement

An ordinance adopted by a local government can be used as land use control for risk-based corrective action purposes if it is supported by a memorandum of agreement between the local government and the department. This section describes these instruments.

Ordinances: An ordinance adopted by a unit of local government that effectively prohibits the installation and use of wells for potable or other purposes may be used as an AUL to ensure that the groundwater ingestion pathway is incomplete, as long as a memorandum of agreement, as described below, is in place. An ordinance may be used as an AUL if it prohibits the installation of water supply wells and requires the closure of any existing private wells, but does not expressly prohibit the installation of public potable water supply wells and require the closure of such wells owned and operated by units of local government. An example of a model ordinance is attached as Appendix J-2.

In a request for approval of a local ordinance as an AUL, the remediating party must submit the following to the department:

1. A copy of the ordinance restricting groundwater use, including prohibitions on new wells, certified by an official of the unit of local government in which the site is located that it is a true and accurate copy of the ordinance,
2. A scaled map(s) delineating the area and extent of groundwater contamination above the applicable remediation objectives including a summary of any measured data showing concentrations of COCs for which the applicable remediation objectives are exceeded,
3. Scaled map delineating the boundaries of all properties under which groundwater is located that exceeds the applicable groundwater remediation objectives, information identifying the current owner(s) of each property identified in the boundary map above,
4. Documentation that the current owners identified in 3. above have been notified that groundwater that extends beneath their property is the subject of a risk-based cleanup and that each has been sent a copy of this request as submitted to the department, and
5. Documentation that adjacent property owners have been notified of the intent to use the local ordinance as an AUL.

After approval by the department and issuance of the Letter of Completion, the remediating party must also notify, in writing, the unit of local government that an ordinance has been approved for use as an AUL. Written proof of this notification must be submitted to the department within 45 days from the date that the department's Letter of Completion is recorded. Appendix J-3 provides a model notification letter showing the contents of such a letter.

The department may void a Letter of Completion that is based on an ordinance if the local government revokes or repeals the ordinance or modifies the ordinance so that it no longer provides the protection that the Letter of Completion relied upon. Also, the Letter of Completion should state that it may be voided if the ordinance that eliminated the groundwater ingestion pathway is repealed or modified such that it no longer provides that protection.

Memoranda of Agreement: Where an ordinance passed by a local unit of government is used as an AUL, the department cannot issue a Letter of Completion unless a Memorandum of Agreement (MOA) is in place. The MOA may include the following:

1. Identification of the authority of the unit of local government to enter into the MOA,
2. Identification of the legal boundaries, or equivalent, to which the ordinance is applicable,
3. A certified copy of the ordinance expressly prohibiting the installation of public and private potable water supply wells, describing the management of such wells, and specifying that any closure of existing wells will be conducted according to state standards,
4. A commitment by the unit of local government to notify the department of any variance requests or proposed ordinance changes at least 30 days prior to the date the local government is scheduled to take action on the request or proposed change,
5. A commitment by the unit of local government to maintain a list of all sites within the geographical unit of local government that have received Letters of Completion under the MRBCA process,
6. A provision that allows departmental access to information necessary to monitor adherence to requirements 4 and 5 above,
7. If applicable, the terms of any commitment by the local government to reimburse the department for periodic review of the local ordinance and actions relating to it, and for any actions taken by the department to address increased risks that arise from actions taken by the local government on the ordinance or related to it, and
8. The commitment of the local government to enforce the ordinance.

11.3.3 Engineered Controls

Engineered barriers may be used as AULs to prevent direct human or environmental exposure to contaminants, but controls to ensure long-term monitoring and maintenance must accompany their use.

An engineered control is a barrier designed or verified using engineered practices that limits exposure to or controls migration of the COCs. Access controls may be considered as an engineered control. Natural attenuation and point of use treatment are not engineered controls.

The use of engineered controls can be recognized in determining remediation objectives only if the engineered controls are intended for use as part of the final remediation.

Any Letter of Completion determination that is based, in whole or in part, upon the use of engineered controls requires effective inspection and maintenance of the engineered control. The inspection, maintenance and integrity certification requirements will be included in the Risk Management Plan. The Risk Management Plan should include contingencies to address temporary breaches of an engineered control. Absent such a provision, temporary breaches of the control, unless caused by Force Majeure, are prohibited unless approved by the department. Any breach caused by Force Majeure must be repaired in a timely manner.

11.3.4 Well Location and Construction Restrictions

State law (Chapter 256, RSMo) allows the Well Installation Board to adopt rules that limit wells or prescribe specific requirements for well construction. These can be used as AULs to the extent that they restrict access to certain groundwaters and thus limit the pathway for contaminants. Rules delineating special areas and setting out requirements for wells in those areas are contained in 10 CSR 23-3.100.

11.3.5 Department of Defense Properties

An environmental covenant may not be required for property owned by the Department of Defense (DOD) until the time that such property is transferred to a nonfederal entity or person. For property owned by the DOD, other land use and/or institutional control mechanisms may be used as part of the federal Risk Management Plan or other appropriate remedial documentation, such as: corrective action decisions, statements of basis or similar decisions, whether formalized in a permit, consent decree, order, or similar enforceable mechanism that may be issued pursuant to the Solid Waste Disposal Act (42 USC §§ 6901 et. seq.) or any Missouri solid and hazardous waste laws. Other acceptable land use and/or institutional control mechanisms may include specific use and activity restrictions or conditions incorporated into base master plans, real property master plans, federal facility master land use plans, federal facility construction review and approval procedures, federal facility dig and ground disturbing activity review and approval procedures, federal facility environmental impact analysis procedures, or physical controls such as fences and signs.

11.4 LETTERS OF COMPLETION: ISSUANCE AND VOIDANCE

Issuance: A Letter of Completion is issued by the department after the satisfactory completion of the Risk Management Plan and after all applicable AULs are in place and their existence has been documented. Its issuance may be contingent upon the continued application of controls to manage activities. The letter attests to the successful completion of the Risk Management Plan and indicates the on-going activities (monitoring, property use restriction, etc.) that must be maintained.

The department will issue a Letter of Completion within 30 days of the department's approval of a Risk Management Plan completion report, which would include documentation of all filings of any covenants. This time frame may vary based on the implementing authority.

The department will mail the Letter of Completion to the remediating party and all property owners by certified mail, postmarked with a date stamp and with return receipt requested. The department may at any time correct errors in a Letter of Completion, or revoke it if AULs are no longer effective.

Depending on the authority handling the remediation, the generic completion letter may vary somewhat and may also include other site-specific information in addition to that outlined below. The letter may also include or be subject to administrative reporting, public participation, and long-term site review requirements of specific federal regulations under which authority a Risk Management Plan is completed. The department will include all of the following in a Letter of Completion.

1. An acknowledgement that the requirements of the Risk Management Plan were satisfied, including reference to the administrative record supporting completion of the site work,
2. The use level of remediation objectives (residential or non-residential use) specifying any AULs imposed as part of the remediation efforts; if the unit of local government has adopted an appropriate ordinance and entered into a MOA with the department,
3. A statement that the department's issuance of the Letter of Completion signifies a release from further responsibilities under applicable laws and regulations in implementing the approved Risk Management Plan and that the site does not present unacceptable risks to human health, public welfare and the environment based upon currently known information. If the remediation site is part of a larger parcel of property or if the remediating party decided to limit the cleanup to specific environmental conditions and related COCs, or both, the Letter of Completion should include this information,
4. The prohibition against the use of any remediation site in a manner inconsistent with any land use limitation imposed as a result of the remediation efforts without additional appropriate remedial activities,
5. A description of any preventive, engineered or institutional controls or monitoring, including long-term monitoring of wells, required in the approved Risk Management Plan or a reference that specifies where in the Risk Management Plan this information can be found,
6. The obligation to record the Letter of Completion in the chain of title for the site,
7. Notification that further information regarding the remediation site can be obtained from the department through a request under the Missouri Sunshine Law (Chapter 610, RSMo.), and
8. A standard agency reservation of rights clause for previously unknown or changing site conditions. This wording will vary depending upon the authority overseeing the remediation,
9. Notification that the Letter of Completion may be voided for reasons listed in 11.4.2, and
10. A description of the remediation site by legal description, by reference to a plat showing the boundaries, or by other means sufficient to identify site location, any of which may be an attachment to the letter.

If only a portion of the site or only selected contaminants at a site were remediated, the Letter of Completion may contain any other provisions agreed to by the department and the remediating party, such as the limitation of the letter to the specific area or contaminants.

The remediating party receiving a Letter of Completion from the department must submit the letter, and, where the remediating party is not the sole owner of the remediation site, an owner certification described below, to the Office of the Recorder of the county in which the remediation site is located within 45 days after receipt of the letter. The Office of the Recorder will record the letter and, where applicable, the owner certification so that it forms a permanent part of the chain of title for the property. The remediating party is responsible for any cost of recording required by the county.

Where the remediating party is not the sole owner of the remediation site, the remediating party must obtain a certification by original signature of each owner, or the authorized agent of the owner(s), of the remediation site or any portion of the remediation site. The certification must be recorded along with the Letter of Completion. The certification must read as follows: "I hereby certify that I have reviewed the attached Letter of Completion, and that I accept the terms and conditions and will abide by any AULs set forth in the letter." The issuance of the letter is contingent on obtaining this certification from all owners.

A Letter of Completion is effective upon the date of the official recording of the letter and any associated owner certifications(s). Until it is in the chain of title, the Letter of Completion is effective only between the department and the remediating party. The remediating party must obtain and submit to the department an acknowledgement from the county recorder office that a copy of the letter and any owner certifications has been recorded. This acknowledgement must be provided to the department within 30 days after recording to demonstrate that the recording requirements have been satisfied. No remediation site with AULs may be used in a manner inconsistent with any limitations unless further evaluation and/or remediation documents the attainment of objectives appropriate for the new land use. If the department approves modified AULs, then an updated Letter of Completion reflecting the new site conditions and requirements may be obtained and recorded as described above.

Voidance: The department may void the Letter of Completion if the remediation site activities are not managed in full compliance with the approved Risk Management Plan upon which the issuance of the Letter of Completion was based. The Risk Management Plan must also contain the specific details of any Long-Term Stewardship requirements that are relied upon to reach the conclusion. Specific acts or omissions that may result in voiding of the Letter of Completion include:

1. Failure to adhere to the terms of an environmental covenant,
2. Failure to adhere to any other applicable institutional controls, land use restrictions, or other AUL(s),

3. Failure of the owner, operator, remediating party, or any subsequent transferee to operate and maintain preventive or engineered controls, to comply with any monitoring plan, or any disturbance of the site contrary to the established AULs,
4. Disturbance or removal of contamination that has been left in place that is not in accordance with the Risk Management Plan. Disturbance of soil contamination may be allowed if, during and after any activity, human health, public welfare, and the environment are protected consistent with the Risk Management Plan or other health and safety requirements,
5. Failure to comply with the recording requirements or to complete them in a timely manner,
6. Obtaining the Letter of Completion by fraud or misrepresentation, and
7. Subsequent discovery of contaminants, releases, or other site specific conditions that were not identified as part of the investigative or remedial activities and which pose a threat to human health, public welfare or the environment.

If the department intends to void a Letter of Completion, it must provide notice to the current titleholder of the remediation site and to the remediating party at his or her last known address, specifying the cause for the voiding and the facts in support of that cause. The department shall give the remediating party a specified time to come into compliance with the terms of the letter. The remediating party or current titleholder may appeal or seek dispute resolution on the department's final decision within 30 days after the receipt of the notice of voiding.

If the department voids a Letter of Completion, it may place a notice to that effect in the chain of title, pursue enforcement action, declare an environmental emergency, or take other action(s) to protect human health, public welfare or the environment, as appropriate.

11.5 INFORMATION AND TRACKING

Effective site information storage and timely retrieval are essential to redeveloping properties and managing site uses.

Information about Environmental Covenants, Letters of Completion, and the recording requirements of the authority under which remediation is being performed must be maintained in department databases.